

CALFED PROPOSAL
ARUNDO DONAX
SURVEY AND ERADICATION



BRICKYARD CREEK

CSU, CHICO RESEARCH FOUNDATION

MAY 15, 2000

Proposal # 2001- B-202 (Office Use Only)

PSP Cover Sheet (Attach to the front of each proposal)

Proposal Title: Arundo Donax: Survey And Eradication

Applicant Name: The CSU, Chico Research Foundation

Contact Name: Jeff Wright

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Amount of funding requested: \$ 1,575,218

Some entities charge different costs dependent on the source of the funds. If it is different for state or federal funds list below.

State cost \$807,512

Federal cost \$773,681

Cost share partners?

X Yes No

Identify partners and amount contributed by each: Tehama County RCD Coordinator \$7,800: Landowner participation \$5000: Agency participation \$1000; Glenn County staff compensated through a State 204 grant \$2500: Workshous \$2,000: The City of Chico staff time \$5000: Tehama County staff \$10,000: Little Chico Creek Watershed Working \$7,000 for staff time: and \$1,000 for equipment and travel over the life of the grant.

CERES, the California Environmental Resources Evaluation System, has pledged its ongoing web and email listserv administration services worth \$10,000.

Indicate the Topic for which you are applying (check only one box).

- | | |
|--|--|
| <input type="checkbox"/> Natural Flow Regimes | <input type="checkbox"/> Beyond the Riparian Corridor |
| <input checked="" type="checkbox"/> Nonnative Invasive Species | <input type="checkbox"/> Local Watershed Stewardship |
| <input type="checkbox"/> Channel Dynamics/Sediment Transport | <input type="checkbox"/> Environmental Education |
| <input type="checkbox"/> Flood Management | <input type="checkbox"/> Special Status Species Surveys and Studies |
| <input type="checkbox"/> Shallow Water Tidal/ Marsh Habitat | <input type="checkbox"/> Fishery Monitoring, Assessment and Research |
| <input type="checkbox"/> Contaminants | <input type="checkbox"/> Fish Screens |

What county or counties is the project located in? Tehama, Glenn and Butte counties

What CALFED ecozone is the project located in? See attached list and indicate number. Be as specific as possible Zone 3 Sacramento River, Zone 6 Colusa Basin, Zone 7 Butte Basin

Indicate the type of applicant (check only one box):

- | | |
|--|---|
| <input type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
| <input type="checkbox"/> Public/Non-profit joint venture | <input type="checkbox"/> Non-profit |
| <input type="checkbox"/> Local government/district | <input type="checkbox"/> Tribes |
| <input checked="" type="checkbox"/> University | <input type="checkbox"/> Private party |
| <input type="checkbox"/> Other: _____ | |

Indicate the primary species which the proposal addresses (check all that apply):

- | | |
|--|--|
| <input type="checkbox"/> San Joaquin and East-side Delta tributaries fall-run chinook salmon | <input type="checkbox"/> Spring-run chinook salmon |
| <input type="checkbox"/> Winter-run chinook salmon | <input type="checkbox"/> Fall-run chinook salmon |
| <input type="checkbox"/> Late-fall run chinook salmon | <input type="checkbox"/> Longfin smelt |
| <input type="checkbox"/> Delta smelt | <input type="checkbox"/> Steelhead trout |
| <input type="checkbox"/> Splittail | <input type="checkbox"/> Striped bass |
| <input type="checkbox"/> Green sturgeon | <input type="checkbox"/> All chinook species |
| <input type="checkbox"/> White Sturgeon | <input checked="" type="checkbox"/> All anadromous salmonids |
| <input type="checkbox"/> Waterfowl and Shorebirds | <input type="checkbox"/> American shad |
| <input checked="" type="checkbox"/> Migratory birds | |
| <input type="checkbox"/> Other listed T/E species: _____ | |

Indicate the type of project (check only one box):

- | | |
|---|---|
| <input type="checkbox"/> Research/Monitoring | <input type="checkbox"/> Watershed Planning |
| <input type="checkbox"/> Pilot/Demo Project | <input type="checkbox"/> Education |
| <input checked="" type="checkbox"/> Full-scale Implementation | |

Is this a next-phase of an ongoing project?

Yes _

No X

Have you received funding from CALFED before?

Yes _

No X

If yes, list project title and CALFED number _____

Have you received funding from CVPIA before?

Yes _

No X

If yes, list CVPIA program providing funding, project title and CVPIA number (if applicable):

By signing below, the applicant declares the following:

- The truthfulness of all representations in their proposal;
- The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and
- The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

The CSU. Chico Research Foundation

Printed name of applicant



Signature of applicant



B. EXECUTIVE SUMMARY

Project Title: Arundo donax: Survey and Eradication Coordination by *the* Team Arundo of the Upper Sacramento (TAUS)

Amount Requested: \$ 1,575,218

Applicant Name: California State University, Chico Research Foundation
ERP Office, O'Connell Room 427
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(530) 898-4335 Phone,
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Eradication Collaborators:

- Team Arundo del Norte
- City of Chico
- County of Butte
- County of Tehama
- County of Glenn
- Big Chico Creek Watershed Alliance
- Little Chico Creek Workgroup
- Tehama County RCD
- Natural Res. Conservation Dist.
- CERES
- UC Davis Info Center for the Envir.
- USDA Ag. Research Service
- CA Department of Water Resources
- CA Department of Fish and Game
- US Envir. Protection Agency
- California Conservation Corps
- Vina RCD

The primary objective of this project is to identify areas infested by *Arundo donax*, to outreach to the landowners affected, to educate those landowners, and to assist them in eradication. Upon successful eradication, the project will evaluate the hypothesis regarding natural revegetation as compared to human assisted restoration through plantings, and maintenance.

Team Arundo of the Upper Sacramento (TAUS) was formed in response to the threat that *Arundo donax* (giant reed or giant cane) presents to the riparian habitat and stream ecosystems of northern California. As identified by the first grant submitted by Team Arundo del Norte, there are two pressing needs; clear identification of where *Arundo donax* growth occurs and starts in the watershed and prompt on-the-ground eradication. TAUS, as a member of Team Arundo del Norte, proposes a three year project that would carry out CALFED's work with regard to the eradication and control of *Arundo donax*, one of the state's most invasive riparian weeds. The selected sites are in Tehama, Butte and Glenn counties on eight creeks (Reeds, Red Bank, Brickyard, Burch, Jewett, Stony, Big and Little Chico creeks).

This project will provide much needed information exchange and coordination to other groups in the region. It will decrease the number of individual projects while providing a structure for clear identification, long term eradication and monitoring of this non-native invasive species (NIS) throughout the CALFED area in accordance with CALFED Goal 5-Non-Native Invasive Species.



C. PROJECT DESCRIPTION

1. STATEMENT OF THE PROBLEM

- a. **Problem:** *Arundo donax*, recognized by CALFED under section 3.2 Ecosystem Restoration Strategic Goals, Goal 4 - Habitat as well as Goal 5 - Non-Native Invasive Species as a non-native, has had a significant effect throughout the Bay-Delta watershed. *Arundo donax* is also "C" listed by the Department of Food and Agriculture. CSU, Chico Research Foundation, under a Proposition 204 grant, has mapped and eradicated *Arundo donax* on Deer Creek, located approximately 25 miles north of Chico, CA. On Deer Creek, the mapping indicates that there is a total of 49 acres of riparian capacity. Of these 49 acres, seven acres of native riparian vegetation have been displaced by *Arundo donax*. This has resulted in loss of native habitat for fish and wildlife as well as riparian cover for the salmonids that spawn in the watershed. The successful eradication of *Arundo donax* on Deer Creek has prompted us to submit this application for your consideration

Arundo donax did not evolve in California and the newcomer has no effective competitors in our California stream beds. This dense, high growing plant quickly chokes and kills everything in its path. The result is a sea of "Cane"- a single species, where there were once hundreds. Wildlife that depended on the alders, cottonwoods, bays, willows, annuals, and open space lose their habitats and food sources. In addition to these adverse effects, *Arundo donax* consumes three times more water than native plants, is a fire hazard, and creates serious flood control problems. (California Exotic Pest Plant Council/Team Arundo's *Arundo donax* Workshop Proceedings)

b. **Conceptual Model:**

Arundo donax occupies space and volume that would otherwise support riparian vegetation and native wildlife. It is of no use to wildlife for cover, foraging, or nesting. Once a clump is established, it grows laterally, eventually crowding out native species of riparian vegetation and suppressing regeneration of native species. This change in the structure of the vegetation lowers its value to wildlife. Infestations of *Arundo donax* in stream channels will alter channel geomorphology (e.g., Stony Creek) and will cause flow splits and bank erosion.

Our model is simple: removal of *Arundo donax* will result in opportunities for the regeneration of native riparian vegetation. While there are no uncertainties related to the invasiveness of *Arundo donax*, there is no substantial information related to the ability of the native vegetation to propagate back into the areas where it has been displaced. This is the hypothesis that will be tested.

c. **Hypotheses Being Tested:**

1. Native species of woody riparian plants will colonize the space opened by the removal of *Arundo donax* clumps. The eight creeks in this project are representative of the variety of geologic and hydrologic conditions found in the northern Sacramento Valley. For example, Stony Creek is managed by a flood control dam (Black Butte),



while, a few miles to the north, Burch Creek still supports a near natural hydrograph. Reeds Creek and Big Chico Creek both flow through urban areas. Results will, therefore, be representative of most riparian situations found throughout the northern Sacramento Valley.

2. Planting of nursery-grown native riparian plants in the space opened by the removal of *Arundo donax* clumps is more effective restoration than natural regeneration. We will select plots on several streams that will be revegetated. The results of these revegetated areas will be compared against areas where *Arundo donax* was removed and not revegetated.
3. Removal of *Arundo donax* from entire reaches of a creek will change the channel geomorphology and lessen flood damage issues.

d. Adaptive Management:

Careful monitoring will take place prior to removal of *Arundo donax*. At selected locations, based upon channel morphology and substrate texture, the exact position of all native plants in the vicinity of *Arundo donax* clumps will be mapped and photographed for comparison after the removal. In future years, the recovery of the natives will be evaluated and any colonization by seedlings will be documented. Differences in the response of the native species to *Arundo donax* removal should be evident within 2-3 years. For each creek, with its own unique hydrograph, we should then be able to evaluate which native species of plants can "take care of themselves" and which will need management intervention to accomplish restoration.

In accordance with Figure 2 of section 3.1 of the Proposal Solicitation Package, we will follow the adaptive management process for this project as follows:

1. **Problem:**
Invasive *Arundo donax* has displaced native vegetation
2. **Establish Ecosystem Goals and Objectives:**
Improve both fish and wildlife habitat by restoring native vegetation through eradication of the *Arundo donax* and subsequent growth of native riparian vegetation that will support native wildlife.
3. **Specify Conceptual Models:**
As stated above, the conceptual models involve choosing selected sites for manually re-vegetating with native species and comparing the success of this restoration with those sites which are left to naturally re-vegetate.
4. **Initiate Restoration Actions:**
Upon results obtained from the conceptual model, we will learn which methods and species are more likely to succeed in restoring streams to their native state. As identified in the proposal solicitation process (section 3.1, Figure 2), this is part of the learning process which can then be applied on a larger scale to other streams where *Arundo donax* has infested and choked native species.

**5. Monitoring:**

Monitoring growth of native species will require time. We will monitor the success of our manual re-vegetation as compared with the natural process. This monitoring effort is the key to evaluation of our hypothesis and will lead us toward our assessment and adaptation. In addition, we plan to apply for future funding to continue this effort.

6. Assess, Evaluate, Adapt

We have chosen the streams indicated in our proposal based on a variety of reasons. Each of these streams has a different gradient, flow rate, hydrograph, variance of native vegetation, and impact by humans. As a result, we expect to find that each stream will yield different results with respect to restoration. Stony Creek, for instance, has lost most of its native riparian vegetation primarily due to the series of dams resulting in loss of sediment load. We expect that this stream will require more assistance with restoration than some of the more native streams such as Brickyard Creek. We will have to assess our vegetation plans, evaluate the results and adapt as the results are obtained.

All of these steps are crucial to the adaptive management process that will be utilized in completion of this project.

e. Educational Opportunities:

There have been many successful *Arundo donax* eradication projects undertaken in recent years. California State University has had significant experience in this arena both as a participant in Team Arundo Del Norte and also as a grantee on the Deer Creek Eradication Project. Eradication is a proven science. With this project, we will bring to CALFED further information related to what happens after *Arundo donax* has been eradicated. This information will be disseminated through research publications, presentations to the California Exotic Pest Plant Council (CALEPPC), presentations at our Team Arundo Del Norte meetings, as well as general outreach meetings and a final report.

2. PROPOSED SCOPE OF WORK**a. Location and/or Geographic Boundaries of the Project:**

The map on the following page indicates the project area. The streams chosen include Reeds, Red Bank, Brickyard, Burch, Jewett, Stony, Big Chico, and Little Chico Creeks.

b. Approach

This project will require the following major components:

1. Mapping - to identify the exact locations and affected landowners
2. Outreach - to educate landowners and to obtain permission to eradicate on their property.
3. Permitting - to obtain the necessary permits prior to commencement of any physical work.
4. Eradication - eradication and removal of *Arundo donax*.

TAUS CALFED

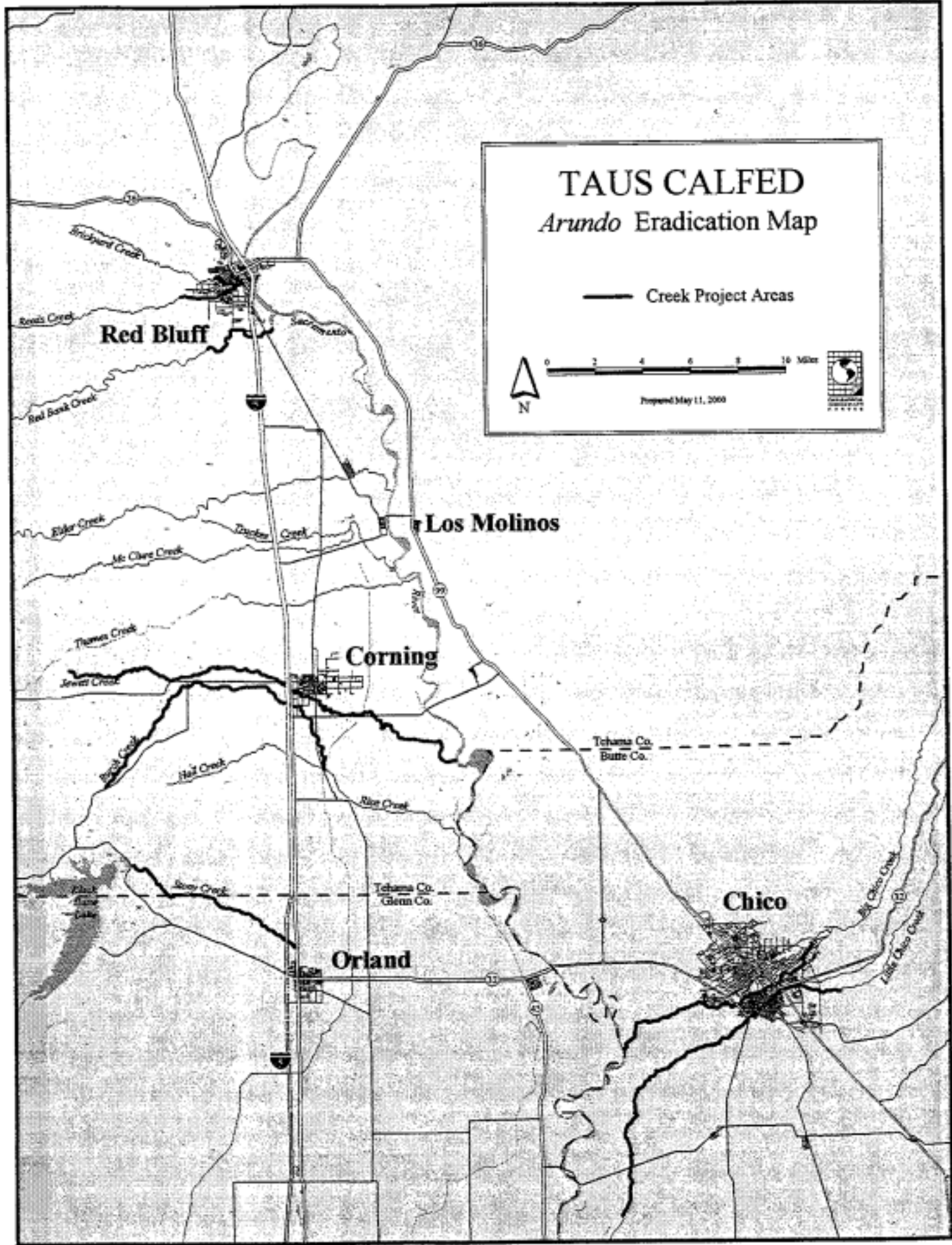
Arundo Eradication Map

— Creek Project Areas



0 2 4 6 8 10 Miles

Prepared May 11, 2000





5. Restoration - selected areas will be chosen to test our hypotheses.
6. Monitoring - careful evaluation and comparison of natural restoration to human assisted revegetation.

Components 2 (Outreach), 3 (Permitting), 5 (Restoration) and 6 (Monitoring) will be addressed in their respective sections of this proposal as identified in the Proposal Solicitation Package. In the following paragraphs we will address mapping and eradication.

MAPPING:

The mapping effort will focus on the identification of *Arundo donax* affected stream reaches in northern Sacramento Valley watersheds. Many of these sites have watershed groups, agencies and landowners (eradication collaborators) that are interested in eradicating *Arundo donax*. These groups have identified a need for assistance in identifying where *Arundo donax* growth starts on their streams. The comprehensive mapping portion of this project will be broken into two tasks.

The first task uses color aerial photography to manually identify and map *Arundo donax*. This method is highly accurate in locating stands of *Arundo donax*. The GIC has access to thousands of frames of 1999 color aerial photography that was flown for the Sacramento River Comprehensive Study. This photography was flown at a large scale (1"=600') where *Arundo donax* can easily be interpreted. In addition, we will contract to fly the major creeks within our project area where *Arundo donax* has been identified.

Where gaps exist, additional airphotos will be flown at the nominal scale of 1"=800' (RF 1:9600) and a forward overlap of 60 percent. The 9"x 9" contact color prints will be scanned at 400 DPI (dots per inch), transformed into digital orthophotographs, and interpreted onscreen using a "heads-up digitizing" process in ArcView GIS. *Arundo donax* is clearly distinguishable on photography at this scale.

The mapping scope will incorporate all riparian plant types including both native and non-native species. Our classification system will be based on the CNPS (California Native Plant Society) vegetation classification system developed by Sawyer and Keeler-Wolf (*A Manual of California Vegetation*). Final mapped data will be referenced with base maps showing various native and non-native habitat types including *Arundo donax* concentrations in the various watersheds.

The Geographic Information Center Director, Chuck Nelson, will oversee all mapping. Information generated by these mapping efforts will be made available to participating agencies using our web site and/or other existing data repositories.

In addition to implementing *Arundo donax* mapping, this task will also address the urgent need for landowner identification and coordination. *Arundo donax* maps will be overlaid with existing county GIS files to identify landowners needing assistance with eradication. GIS parcel level landowner information is available for all except two of the targeted creeks, Burch and Jewett Creeks. However, as a participating agency, Tehama County



Flood Control and Water Conservation District has agreed to provide up-to-date parcel maps for Burch and Jewett Creeks. These maps will be scanned, digitized and the parcel information will be added to our current GIS database.

ERADICATION:

The project director and the landowners will determine the best manner to address the *Arundo donax* eradication. Depending upon the circumstances, the project director may use graduate students, private subcontractors and/or other agencies (California Conservation Corp, AmeriCorp, Salt Creek Prison Crew) to do the actual eradication. There will be a high level of landowner involvement in the monitoring and maintenance of the eradication.

There are three methods of eradication commonly used. The first method of eradication utilizes standard broadcast spraying techniques. This method is used only when the *Arundo donax* is situated in stand-alone clusters and where there are no risks of over-spray to surrounding native vegetation.

The second method involves cutting the reed down to 18" or less, bundling, then hauling the canes to disposal. Common disposal methods include burning onsite, hauling to a dump, or processing for various biomass uses. Toward the end of the peak-growing season, an application of Rodeo® is also applied to any re-growth that occurs.

The third method is the most costly. However, it also appears to be the most effective. This method involves cutting the *Arundo donax* similar to method 2. Additionally, a licensed pesticide applicator paints or daubs a solution of Rodeo on the fresh cut.

Regardless of the method used, follow-up treatments are usually necessary in a year or two after the first eradication. Additionally, on-going monitoring of eradication sites will coincide with our monitoring program (see Monitoring).

To assure sustainability of the eradication work, work done through this project will strongly encourage *Arundo donax* control efforts that:

- address issues of riparian zone health as a preventive measure against *Arundo donax* invasion or re-invasion
- analytically account for *Arundo donax*'s downstream direction of invasion: ie., "work from the top of the watershed down"
- address upstream sources when working on a downstream site
- pursue downstream entities to help fund eradication of upstream sources

Deliverables: *Arundo donax* eradication on eight streams using the most up-to-date eradication methods scientifically supported. Eradication funding (crews, applicator, hauling, disposal, herbicide, follow-up and monitoring). The project director will provide quarterly up-dates and a final report.



c. Monitoring and Assessment Plans

TAUS is fully prepared to comply with a Project Monitoring and Eradication Plan to be conducted by our riparian ecologist, Dr. Tom Griggs. Dr. Griggs will seek CALFED or CVPIA approval prior to any data collection. The data collected will be actively used to help determine the effectiveness of our restoration approach. From the results, we will be able to make better educated judgements about where active restoration is warranted. This data will help guide future decisions on new applications currently being developed.

The Project Monitoring and Eradication Plan will include:

- site information, including plan-form drawings showing stream and *Arundo donur* locations, photos of the site (including aerial), any sensitive species or habitats onsite
- geomorphic description of *Arundo donur* stand locations, including cross-sections of the stream and bank above, below, and within the *Arundo donux* stand.
- characteristics of *Arundo donur* infestation: area and/or linear extent, standard data sheet, and propagate source(s) if known
- methods for addressing needs of sensitive species, and re-vegetation plan, if desired

Much of the monitoring effort will be accomplished using our outreach coordinators, landowners, and our university pool of educated and trained personnel. Prior to cutting the *Arundo donax*, the locations (latitude and longitude) will be stored in our differential global positioning system (GPS) facilitating the return to the eradication sites for future evaluation. The sites will be evaluated periodically but no less than every three months for eradication success and encroachment or migration of any native species back toward the eradicated areas.

In addition to monitoring eradication site success, this project will collect data of regional strategic importance. Information gathered on potential eradication projects will serve to assess the scope of the *Arundo donur* problem regionally and help secure future funding for eradication. Collectively, partners' Eradication and Monitoring Plans will provide TAUS and CALFED with invaluable information on the distribution, spread, control, and ecological effects of *Arundo donax*, the most invasive riparian weed in the state. This information will be disseminated to the public and agencies via TAUS's website and work with related projects.

d. Data Handling and Storage

The TAUS project will be implemented in cooperation with existing eradication projects and through its close association with Team Arundo del Norte. Information and experience will become part of the Arundo data clearinghouse being developed by TAdN. This clearinghouse will be web accessible. An annual monitoring report will be submitted at the end of each grant year. We will present findings and address our project's progress through our quarterly reports. All information gleaned from this project will be stored at CSU, Chico, accessible through the Watershed Resource Center Public Library funded by the Sacramento River Watershed Program.



e. Expected Products/Outcomes

Much data has been published related to eradication of *Arundo donax*. As university faculty, we are encouraged to publish and present our research or project results at conferences, seminars, and group meetings such as Team Arundo Del Norte. It is also our goal to publish and present project data at professional meetings, i.e., California Exotic Pest Plant Council, Department of Fish and Game, CA Food and Agriculture, and US Fish and Wildlife Service.

Our final report will be thorough, including maps, monitoring and assessment data, comparing streams that were eradicated to those streams that were eradicated and restored. This analysis will include conclusive data which will assist CALFED in achieving the goal of restoring other affected streams to a much healthier state than exists today.

f. Work Schedule

See attached work schedule table at the end of this section. If partially-funded, we would reduce the number of streams to be surveyed and eradicated.

g. Feasibility

As previously stated, the eradication of *Arundo donax* is a proven science. Cautiously using chemical applications, the invasive species can be eliminated. It is also known that restoration (re-vegetation) can be accomplished where there is adequate sediment load. The goal of this project will be to determine if the restoration can occur naturally, or if it can be substantially accelerated through human intervention (planting).

Arundo donax eradication work often requires permits. These permits may include US COE 404 or 401, DFG 1603, a fire district burn permit, an air quality district burn permit, a water district permit as well as permits from the county for grading and a county agricultural commissioner permit for herbicide application.

There are no accounts of any sensitive species using *Arundo donax* as habitat. When Endangered Species (FWS/NMFS) are involved, the permitting burden can easily stymie a watershed group's ability to remove *Arundo donax*. Nationwide or regional permits would greatly ease the burden on these local partners. TAdN member Paul Jones (EPA) has approached the San Francisco and Sacramento Corps of Engineers offices about issuing a Nationwide Permit 27 similar to the San Diego office permit for southern California *Arundo donax* eradication work. TAdN will continue the push for general permits from various agencies to cover *Arundo donax* eradication work in the rest of the state. If they are successful AETNS will pass this information on to the watershed groups they are working with.

The project director will assist landowners in consulting with permitting agencies. With this assistance, no permitting obstacles are foreseen. Consultation with the CA Department of Water Resource's Reclamation Board may be required in certain locations.



FIGURE 2 –SCHEDULE DATES

PROJECT MANAGEMENT

Kickoff Meeting	Nov-00
Collect Existing Hydrology Flow Data	Nov-00 to Feb-00
Develop Stream Mapping Priority List	Nov 1-15, 2000
Monthly Progress Meetings	
Quarterly Reports	Start Jan 1-10
Final Report	Complete 10-31-03
Evaluate Bid Documents	Jun- to Jul each yr. of eradication

MAPPING

Landowner Map Updates	Nov-00 to Mar-01
Secure Existing Aerial Photo/Develop Orthophotos	Nov-00 to Feb-01
Develop Flight Plan	Feb-01 to Mar-01
Contract Additional Aerial Photography (Seasonal)	Mar-01 to Jun-01
Processing/Develop Orthophotos	Apr-01 to Jul-01
Arundo-Riparian Mapping	May-01 to Aug-01
Develop Landowner List for Outreach	Jun-01 to Sept-01
GPS Support	Mar-02 to Nov-02

ERADICATION

Preliminary Field Surveys	Nov-00 to May-00
Develop Eradication Strategy	Nov-00 to Mar-01
Develop Bid Documents	Apr-01 to May-01
Bid and Award Subcontracts	May-01 to Jul-01
First Year Eradication	Sept. 2001
Second Year Eradication	Sept, 2002
Third Year Eradication	Sept, 2003

RESTORATION

Select Test Sites for Restoration	Mar-01 to Jun-01
Re-vegetation after 2nd year	Mar-02 to Apr-02
Re-vegetation after 3rd year	Mar-03 to Apr-03

LANDOWNER OUTREACH

Preliminary Landowner Meeting	Feb-00
Develop Landowner Information Brochure	Nov-00 to Feb-01
Landowner Meetings (1/mo/stream for 4 months)	Feb-01 to Aug-01
Individual Agreements (as required)	Mar-01 to Aug-01

MONITORING

Collect, and photograph existing conditions	Nov-00 to Jul-00
Quarterly Monitoring and recording data	
First year eradication monitor	Mar-02 to May-02
Second year eradication monitor	Mar-03
Third year eradication monitor	Aug-03
Final collection of field results	Aug-03 to Oct-03



D. APPLICABILITY TO CALFED ERF' GOALS AND IMPLEMENTATION PLAN AND CVPIA PRIORITIES.

1. ERF' Goals And CVPIA Objectives

The ERP Strategic Plan identified twelve areas of scientific uncertainty on which better information and understanding is needed. As noted, the concept of limiting factors is an important aspect of scientific uncertainties. The success of our restoration efforts are ultimately tied to the appropriateness of our management action which can be assessed on how favorably the native plant species respond to the removal of *Arundo donm*. As the PSP points out, many different factors control plant growth responses under different environmental conditions, and those factors most limiting to the distribution and abundance of populations are usually unknown. Through the funding of this grant application you will gain a greater level of knowledge of the conditions necessary for successful native plant propagation.

The Strategic Plan identified non-native invasive species (NIS) as one of the most important issues facing the CALFED Ecosystem Restoration Program. Our goal is to assist in answering questions pertaining to the competitive relationships between native and non-native species and the most effective way to prevent new infestations and manage those that already exist.

Specifically, this project addresses:

Goal 5 of the Ecosystem Restoration Program to "Prevent establishment of additional non-native species and reduce the negative biological and economic impacts of established non-native species"

Objectives 6 to "halt the introduction of invasive aquatic and terrestrial plants into Central California" and

Objective 7 to "focus control efforts on those introduced species for which control is most feasible and of greatest benefit."

These project objectives correspond with Goals I, II, and III of the NIS Plan to prevent and control the spread of NIS through appropriate management, and reduce their negative ecological and economic impacts. This project addresses the issues (NIS Plan) of leadership, authority and organization, coordination, cooperation and partnership, and education and outreach by providing the following:

- one contract to complete coordinated eradication projects on eight tributaries of the Sacramento River,
- integration of the best scientific methods for project implementation and monitoring;
- expertise and information exchange, and
- new information from these projects, thereby increasing the knowledge of the mechanisms by which *Arundo donax* disrupts the riparian ecosystem.

As with the TAdN project submitted and funded in 1999, the primary objective of this project is to protect remaining native riparian habitat from destruction by the non-native invasive plant, *Arundo donax*. TAdN reports that this alien grass is, in some watersheds, possibly the greatest biological threat to dwindling riparian resources. The watershed coordinators in the cooperating watersheds on this project also recognize this threat (see attached letters of support).



2. Relationship to Other Ecosystem Restoration Projects.

Through TAdN's meetings, website, and email listserv, there has already been an increase in coordination and communication. Coordination with others attempting *Arundo donax* control and those studying control methods and their effects greatly improves the information resources available to this project. The use of the TAdN's newly developed outreach materials and guidance publications is essential to the success of this project. Previous development of these materials will allow AETNS to concentrate on educating the landowners and actual eradication. Technology and databases that already exist at the UC Davis Information Center for the Environment (ICE), San Francisco Estuary Institute (SFEI), and the California Resources Agency's CERES Program will be utilized to take advantage of work already done.

Eradication of *Arundo donax* in the Bay-Delta area will positively address objectives of other CALFED Common Programs:

Watershed Workgroup: Empower local eradication partners and stakeholders in watersheds to act on informed assessment of watershed needs, with the backing of the best expertise from TAUS. Provide watershed groups with the latest information and expertise on issues involved in *Arundo donax* eradication.

Water Use Efficiency: *Arundo donax* removal will decrease the loss of water through excessive transpiration as it is a prodigious consumer of water, far beyond the normal usage of native vegetation (Iverson, 1994).

3. Requests for Next Phase Funding-Not Applicable

4. Previous Recipients of CALFED or CVPIA funding.

The California State University, Chico Research Foundation has received prior CALFED funding for various projects on Butte Creek, Deer Creek and Big Chico Creek. We have also received funding to conduct an economic study in Glenn County on potential farmland loss, for riparian mapping along the Sacramento River and for various watershed education projects. The Research Foundation has never received funding from CALFED or any other entity for this specific grant application.

5. System-Wide Ecosystem Benefits

This project will stop the advance of the invasive species *Arundo donax* through direct, intensive eradication in infested sections of selected waterways in the northern Sacramento Valley. It will also coordinate these regional efforts with all *Arundo donax* control projects in the region through a network of expertise, new information, educational materials, and streamlined procedures already developed by TAdN.

The timing and locations of this project are optimal for returns on financial and human resource investment. The project area is an area where streams and rivers are now showing early to mid-successional stages of infestation. Many of this project's Level 3 eradication sites would be in watersheds where the *Arundo donax* infestation still constitutes a small percentage of the riparian vegetation. It is imperative that these and other watersheds receive funding to control these small infestations before they become an ecological crisis.



E. QUALIFICATIONS

Project Administrator: Research Foundation

The University Foundation, established in 1940, is a non-profit foundation and auxiliary organization, acting as fiscal agent for California State University, Chico on all externally funded projects. The University Foundation, providing overall financial management, personnel, insurance, and other management services, acts as the administrative liaison with all funding agencies. The University Foundation works with Project Directors/Principal Investigators and their staff to ensure compliance with all applicable regulations and appropriate accounting standards. The University Foundation is currently working with over 150 different agencies. We are familiar with the regulations required by state and federal agencies, and those in the private sector.

The University Foundation at California State University, Chico provides a fully automated accounting system meeting current Generally Accepted Accounting Standards. This automated system has been in use for over ten years and has been recently enhanced to provide greater efficiency in handling the large volume of grants and contracts awarded to the University Foundation annually. ***Currently the University Foundation carries on its books over \$40 million in externally funded projects.***

Project staff and associates form an efficient team of professional scientists and engineers who are experienced in all major components of the environmental field. The expertise of the staff at CSU Chico encompasses general environmental studies and reports, permitting and licensing of commercial and industrial facilities, analysis of government regulations and policies, and specialized biological, hydrological, and soil resources studies.

Project Director:

Professor Rich Holman is a faculty member in the Department of Construction Management at California State University, Chico. He is currently working on an *Arundo donax* eradication project on a 3-mile stretch of lower Deer Creek in Tehama County. The project is a three-year test project involving three different methods of eradication and includes monitoring each method and evaluating the results.

Professor Holman is an active participant with the Vina RCD, Deer Creek Conservancy, Big Chico Creek Alliance, and Deer Creek Watershed Project. Mr. Holman has been actively involved with watershed restoration projects since 1994 when he was the project engineer on the \$64 million Shasta Dam Temperature Control Device. His vast construction experience is invaluable for "on the ground" implementation of watershed projects.

Project Manager:

Dr. Tom Griggs is Adjunct Professor in the Department of Biological Sciences at California State University, Chico. He is currently managing a riparian restoration



project for the California Department of Fish and Game at the mouth of Cottonwood Creek in Shasta County. Dr. Griggs is also managing a project for the Department of Water Resources that is using native grasses and sedges to inhibit soil erosion during flood flows at the M&T Flood Relief Structure in Butte County.

Before joining CSU, Dr. Griggs worked for 17 years for The Nature Conservancy of California. From 1988 to 1998 he managed the development of the technology for large scale (100+ acres) riparian forest restoration at the Cosumnes River and at several sites along the Sacramento River using adaptive management strategies.

Geographical Information Center (GIC): The GIC is an applied mapping center located at California State University, Chico specializing in GIS technology. Chuck Nelson has been Director of the Center since its beginning in 1989. The GIC has had extensive experience mapping riparian vegetation along the Sacramento River, assisting local governments in starting GIS programs and assisting in the mapping needs of the various North State watershed conservancies.

TAUS Committee: This team consists of Rich Holman (CSU, Chico Construction Management), Chuck Nelson (CSU, Chico Geographic Information Systems), and various ShedHead (watershed coordinators) meeting participants.

- **Technical Advisory Committee:** Team *Arundo donax* del Norte is a multi-stakeholder partnership dedicated to the reduction and eventual elimination of *Arundo donax*, where it threatens rivers, creeks and wetlands in central and northern California. This Team meets quarterly and communicates actively through an email listserv (tadn@ceres.ca.gov) and an informative website (<http://ceres.ca.gov/tadn>). The team provides a forum of communication for those conducting current and planned research and eradication projects and for the identification and discussion of issues involved in *Arundo donax* invasion. TAdN will advise on eradication, monitoring, and revegetation methods, help to address permitting issues, and will assist in identifying further opportunities for complementary projects, cooperative agreements, and funding.
- **Outreach Coordinators:** Local group coordinators who are planning *Arundo donax* removal projects but who need resources and assistance in effectively addressing the problem. For Tehama County we will be collaborating with Vicky Dawley, the Watershed Coordinator for the Tehama County Resource Conservation District. For Glenn County, we are collaborating with John Benoit, Planning Director and Christy Leighton, Principal Planner for the Public Works and Development Services Agency. In Butte County we are collaborating with Dennis Beardsley, the City of Chico Parks Director, Suzanne Gibbs, Big Chico Creek Watershed Alliance and Jean Hubbell from the Little Chico Creek Working Group. We have also submitted drafts of our application to Ed Craddock from the Butte County Office of Water Management.



F. COST

1. BUDGET

To further define our attached budget, we felt it would be prudent to include our estimate of eradication costs for each of the creeks listed in this proposal. Our total mapping cost is also identified in this summary.

TRIBUTARY	ERADICATION ESTIMATE
Reeds Creek	\$20,000
Brickyard Creek	\$20,000
Jewett Creek	\$110,000
Red Bank Creek	\$25,000
Burch Creek	\$135,000
Little Chico Creek	\$80,000
Stony Creek	\$90,000
Big Chico Creek/Lindo Channel	\$50,000
TOTAL ERADICATION COSTS:	\$530,000

Mapping	\$120,000
Restoration (Planting)	\$20,000
Outreach, Permitting, Restoration, Monitoring, and Management	\$905,200
TOTAL COSTS	\$1,575,200

Our approach to our cost estimating is based on the estimated quantities of *Arundo donax* and the unit prices developed from past projects. Estimated quantities of *Arundo donax* for the Butte County streams was provided by the Big Chico Creek Watershed Alliance and the Little Chico Creek Watershed Working Group. Our data for Stony Creek was based on our project manager and project director's experience working on this tributary as well as input from Glenn County staff. The quantities for Tehama County were provided by field surveys as well as previous eradication proposals that were not funded.

All chemical eradication work will be competitively bid in compliance with California State Law with the exception of our mapping subcontractor, the Geographical Information Center located on California State University, Chico. The justification of this sole source is their experience and expertise in identifying *Arundo donax* from aerial photographs and their existing GIS county database information covering the project area which will be provided to the project at no cost. We may also choose to use Americorps, California Conservation Corps, or the Salt Creek Prison crews for actual cutting, bundling, and burning of the *Arundo donax*.

Equipment is defined as an item of property that costs \$1,000 or more per unit and has an expected life of 3 years or more. For this project equipment will include such

Table 1. Sample annual and total budget. Please modify to reflect your company's invoice categories and overhead policy.

		Subject to Overhead									
Year	Task	Direct Labor Hours	Salary	Benefits	Misc & Other	Supplies & Expendables	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
Year 1	Task 1										
	Project Management				\$15,070	\$5,000	\$5,000		\$25,070		\$25,070
	Project Director	324	\$17,820	\$5,702					\$23,522		\$23,522
	Fluvial Geo.	38	\$1,710	\$547					\$2,257		\$2,257
	Project Manager	38	\$1,710	\$547					\$2,257		\$2,257
	Student Assistants	325	\$3,900	\$468					\$4,368		\$4,368
	Admin Fee							\$10,559		\$11,495	
	Total Direct Cost								\$57,475		\$57,475
	Task 1 Totals	725	\$25,140	\$7,265	\$15,070	\$5,000	\$5,000	\$10,559	\$68,034	\$11,495	\$68,970
	Task 2										
	Eradication & Mapping				\$12,000	\$4,000	\$332,000		\$348,000		\$348,000
	Project Director	132	\$7,260	\$2,323					\$9,583		\$9,583
	Fluvial Geo.		\$0	\$0					\$0		\$0
	Project Manager	1060	\$47,700	\$20,034					\$67,734		\$67,734
	Student Assistants	750	\$9,000	\$1,080					\$10,080		\$10,080
	Admin Fee							\$26,863		\$87,079	
	Total Direct Cost								\$435,397		\$435,397
	Task 2 Totals		\$63,960	\$23,437	\$12,000	\$4,000	\$332,000	\$26,863	\$462,260	\$87,079	\$522,477
	Task 3										
	Monitoring/ Revegetation				\$10,652	\$6,000	\$5,000		\$21,652		\$21,652
	Project Director	100	\$5,500	\$1,760					\$7,260		\$7,260

Year	Task	Direct Labor Hours	Salary	Benefits	Misc & Other	Supplies & Expendables	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
	Fluvial Geo.	50	\$2,250	\$720					\$2,970		\$2,970
	Project Manager	300	\$13,500	\$4,320					\$17,820		\$17,820
	Student Assistants	1000	\$12,000	\$1,440					\$13,440		\$13,440
	Admin Fee							\$13,965		\$12,628	
	Total Direct Cost								\$63,142		\$63,142
	Task 3 Totals		\$33,250	\$8,240	\$10,652	\$6,000	\$5,000	\$13,965	\$77,107	\$12,628	\$75,770
	Task 4										
	Outreach/ Coordination				\$3,044	\$6,500			\$9,544		\$9,544
	Project Director	75	\$4,125	\$1,320					\$5,445		\$5,445
	Fluvial Geo.	50	\$2,250	\$720					\$2,970		\$2,970
	Project Manager	232	\$10,440	\$3,341					\$13,781		\$13,781
	Gibbs	1000	\$22,000	\$7,480					\$29,480		\$29,480
	Dawley	1639	\$26,224	\$8,916					\$35,140		\$35,140
	Student Assistants	1176	\$14,112	\$1,693					\$15,805		\$15,805
	Admin Fee							\$33,243		\$22,433	
	Total Direct Cost								\$97,176		\$97,176
	Task 4 Totals		\$79,151	\$23,470	\$3,044	\$6,500	\$0	\$33,243	\$145,409	\$22,433	\$119,609
	Task 5										
	Admin				\$1,000	\$4,500	\$500		\$6,000		\$6,000
	Director	100	\$5,500	\$1,760					\$7,260		\$7,260
	Project /Fluvial Geo.		\$0						\$0		\$0

Year	Task	Direct Labor Hours	Salary	Benefits	Misc & Other	Supplies & Expendables	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
	Project Manager	50	\$2,250	\$720					\$2,970		\$2,970
	Student Assistants	75	\$900	\$108					\$1,008		\$1,008
	Admin Fee							\$3,633		\$3,448	
	Total Direct Cost								\$17,238		\$17,238
	Task 5 Totals		\$8,650	\$2,588	\$1,000	\$4,500	\$500	\$3,633	\$20,871	\$3,448	\$20,686
Total Cost Year 1			\$210,151	\$65,000	\$41,766	\$26,000	\$342,500	\$88,263	\$773,681	\$137,083	\$807,512

Year	Task	Direct Labor Hours	Salary	Benefits	Misc & Other	Supplies & Expendables	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
Year 2	Task 1										
	Project Management				\$5,000	\$3,750	\$5,000		\$13,750		\$13,750
	Project Director	150	\$8,250	\$2,640					\$10,890		\$10,890
	/FluvialGeo.	20	\$900	\$288					\$1,188		\$1,188
	Project Manager	15	\$675	\$216					\$891		\$891
	Student Assistants	150	\$1,800	\$216					\$2,016		\$2,016
	Admin Fee							\$4,883		\$5,747	
	Total Direct Cost								\$28,735		\$28,735
	Task 1 Totals		\$11,625	\$3,360	\$5,000	\$3,750	\$5,000	\$4,883	\$33,618	\$5,747	\$34,482
	Task 2										
	Eradication & Mapping				\$5,652	\$2,200	\$185,500		\$193,352		\$193,352
	Project Director	105	\$5,775	\$1,848					\$7,623		\$7,623
	Fluvial Geo.	420							\$0		\$0
	Project Manager	400	\$18,000	\$7,560					\$25,560		\$25,560
	Student Assistants	510	\$6,120	\$734					\$6,854		\$6,854
	Admin Fee							\$12,556		\$46,678	
	Total Direct Cost								\$233,389		\$233,389
	Task 2 Totals		\$29,895	\$10,142	\$5,652	\$2,200	\$185,500	\$12,556	\$245,945	\$46,678	\$280,067
	Task 3										
	Monitoring/Revegetation				\$7,000	\$4,650	\$5,000		\$16,650		\$16,650

Year	Task	Direct Labor Hours	Salary	Benefits	Misc & Other	Supplies & Expendables	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
	Project Director	100	\$5,500	\$1,760					\$7,260		\$7,260
	Fluvial Geo.	20	\$900	\$288					\$1,188		\$1,188
	Project Manager	174	\$7,830	\$2,506					\$10,336		\$10,336
	Student Assistants	1000	\$12,000	\$1,440					\$13,440		\$13,440
	Admin Fee							\$11,017		\$9,775	
	(Total Direct Cost								\$48,874		\$48,874
	/Task3 Totals		\$26,230	\$5,994	\$7,000	\$4,650	\$5,000	\$11,017	\$59,891	\$9,775	\$58,649

Year	Task	Direct Labor Hours	Salary	Benefits	Misc & Other	Supplies & Expendables	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
	Task 4										
	Outreach/ Coordination				\$2,500	\$5,000					
	Project Director	75	\$4,125	\$1,320					\$5,445		\$5,445
	Fluvial Geo.	50	\$2,250	\$720					\$2,970		\$2,970
	project Manager	150	\$6,750	\$2,160					\$8,910		\$8,910
	Gibbs	1000	\$22,000	\$7,480					\$29,480		\$29,480
	Dawley	1000	\$16,000	\$5,440					\$21,440		\$21,440
	Student Assistants	1000	\$12,000	\$1,440					\$13,440		\$13,440
	Admin Fee							\$26,513		\$17,837	
	Total Direct Cost								\$76,240		\$76,240
	Task 4 Totals		\$63,125	\$18,560	\$2,500	\$5,000	\$0	\$26,513	\$116,698	\$17,837	\$94,077
	/Task5										
	Admin				\$700	\$3,000	\$500		\$4,200		\$4,200
	Project Director	50	\$2,750	\$880					\$3,630		\$3,630
	Fluvial Geo.								\$0		\$0
	Project Manager	25	\$1,125	\$360					\$1,485		\$1,485
	Student Assistants	50	\$600	\$72					\$672		\$672
	Admin Fee							\$1,880		\$1,997	
	Total Direct Cost								\$9,987		\$9,987
	Task 5 Totals		\$4,475	\$1,312	\$700	\$3,000	\$500	\$1,880	\$11,867	\$1,997	\$11,984

Year Task		Direct Labor Hours	Salary	Benefits	Misc & Other	Supplies & Expendables	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
Total Cost Year 2			\$135,350	\$39,368	\$20,852	\$18,600	\$196,000	\$56,847	\$467,017	\$82,034	\$479,259
Year 3 /Task 1											
	Project Management				\$5,000	\$1,000	\$5,000		\$11,000		\$11,000
	Project Director	150	\$8,250	\$2,640					\$10,890		\$10,890
	Fluvial Geo.	10	\$450	\$144					\$594		\$594
	Project Manager	15	\$675	\$216					\$891		\$891
	Student Assistants	150	\$1,800	\$216					\$2,016		\$2,016
	Admin Fee							\$4,694		\$5,078	
	Total Direct Cost								\$25,391		\$25,391
	Task 1 Totals		\$11,175	\$3,216	\$5,000	\$1,000	\$5,000	\$4,694	\$30,085	\$5,078	\$30,469
Task 2											
	Eradication & Mapping				\$5,000	\$3,000	\$132,500		\$140,500		\$140,500
	Project Director	75	\$4,125	\$1,320					\$5,445		\$5,445
	Fluvial Geo.								\$0		\$0
	Project Manager	100	\$4,500	\$1,890					\$6,390		\$6,390
	Student Assistants	300	\$3,600	\$432					\$4,032		\$4,032
	Admin Fee							\$5,135		\$31,273	
	Total Direct Cost								\$156,367		\$156,367
	Task 2 Totals		\$12,225	\$3,642	\$5,000	\$3,000	\$132,500	\$5,135	\$161,502	\$31,273	\$187,640
Task 3											
	Monitoring/ Revegetation				\$5,000	\$3,000	\$5,000		\$13,000		\$13,000
	Project Director	34	\$1,870	\$598					\$2,468		\$2,468
	Fluvial Geo.	8	\$360	\$115					\$475		\$475

Year	Task	Direct Labor Hours	Salary	Benefits	Other Misc.	Supplies	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
	Project Manager	150	\$6,750	\$2,160					\$8,910		\$8,910
	Student Assistants	496	\$5,952	\$714					\$6,666		\$6,666
	Admin Fee							\$6,271		\$6,304	
	Total Direct Cost								\$31,519		\$31,519
	Task 3 Totals		\$14,932	\$3,587	\$5,000	\$3,000	\$5,000	\$6,271	\$37,790	\$6,304	\$37,823
	Task 4										
	Outreach/ Coordination				\$2,500	\$5,000			\$7,500		\$7,500
	Project Director	56	\$3,080	\$986					\$4,066		\$4,066
	Fluvial Geo.		\$1,980	\$634					\$2,614		\$2,614
	Project Manager	50	\$2,250	\$720					\$2,970		\$2,970
	Gibbs	720	\$15,840	\$5,386					\$21,226		\$21,226
	Dawley	1000	\$16,000	\$5,440					\$21,440		\$21,440
	Student Assistants	1000							\$13,440		\$13,440
	Admin Fee		\$12,000					\$21,483		\$14,651	
	Total Direct Cost			\$1,440					\$61,690		\$61,690
	Task 4 Totals		\$51,150	\$14,606	\$2,500	\$5,000	\$0	\$21,483	\$94,739	\$14,651	\$76,341
	Task 5										
	Admin				\$700	\$2,000	\$500		\$3,200		\$3,200
	Project Director	50	\$2,750	\$880					\$3,630		\$3,630
	Fluvial Geo.								\$0		\$0
	Project Manager	25	\$1,125	\$360					\$1,485		\$1,485
	Student Assistants	25	\$300	\$36					\$336		\$336
								\$1,754	\$1,754	\$1,730	\$1,730
	Task 5 Totals		\$4,175	\$1,276	\$700	\$2,000	\$500	\$1,754	\$10,405	\$1,730	\$10,381

Year	Task	Direct Labor Hours	Salary	Benefits	Misc & Other	Supplies & Expendables	Service Contracts	Federal Admin. Fee	Federal Total Cost	State Admin Fee	State Total Cost
	Total Cost Year 3		\$93,657	\$26,327	\$18,200	\$14,000	\$143,000	\$39,336	\$334,520	\$59,037	\$342,655
	Total Project Cost		\$439,158	\$130,695	\$80,818	\$58,600	\$681,500	\$184,446	\$1,575,218	\$278,154	\$1,629,426



items as computers, printers, field survey equipment. GPS mapping equipment. and special equipment required to assist in the eradication effort.

Indirect costs are those costs that cannot by their nature be specified on a project-by-project basis in the same way that line item direct costs can. Generally, indirect costs are those that support project activities, as compared to those that are directly related to specific project tasks. Universities establish an indirect cost rate with the Federal Government by following the appropriate provisions of OMB Circular A-21. This circular was officially modified and reissued on May 8, 1996, which, among other things, changed the term "indirect costs" to "Facilities and Administrative (F&A) Costs." The circular spells out two methods for determining such costs. We use the "Simplified Method" for institutions with less than \$10 million in awards annually from the Federal Government. Currently, we have two rates approved by our Health and Human Services Regional Office (Region IX) contacts: 42% of salaries and wages for on-campus projects and 18.5% of salaries and wages for off-campus projects. May Wong (415-556-1704) is our contact and can provide you with verification of our rate which her office approves after reviewing our financial statements.

Typically indirect costs are intended to generally cover costs such as facilities (including the space itself as well as utilities and janitorial services), general administration, insurance, "infrastructure" (for instance, availability of such resources as library holdings and other resources--e.g., access to electronic databases, communication links, computing backbone, and the like), grant and contract management services, cost of advancing funds for projects which pay in arrears and similar costs.

2. COST SHARING

TAUS has a cost share commitment from Vicky Dawley, Watershed Coordinator for Tehama County RCD to spend approximately 5 hours per week from the start of this grant (which we expect to be in June of 2001 until June 2003). Vicky is compensated for her time on a State 204 grant that is due to start in June of 2000 and end in June of 2003. Currently she is being compensated at \$16.00 per hour. We estimate the cost share at approximately \$7,800. We further estimate that we will have the participation of no less than 25 landowners at three county meetings and several smaller workshops. We estimate their time at no less than \$10.00 per hour for an approximate total of \$5000. We have no way of estimating how many agency individuals will be participating in all of the outreach meetings. However, we estimate that at least two per meeting will participate at a cost of \$25.00 per hour for an estimated total of \$1000.

Glenn County has also indicated its willingness to allocate staff time as needed to this project. Some of their staff time is being compensated for in a new State 204 grant. They will continue to conduct landowner outreach meetings with TAUS and use this forum to keep Stony Creek landowners apprised of the progress of this project. They estimate that these meetings cost approximately \$2000 to conduct. They further



estimate that their staff time over the life of this grant will generate approximately \$2500 worth of cost share for each year.

The City of Chico has indicated their willingness to use staff time to assist with eradication efforts on city property. The City estimates that the amount of time they will spend on this project will generate approximately \$5000 worth of cost share for each year.

Tehama County staff people will also be heavily involved in this project. Tehama County estimates that they will be able to provide approximately \$10,000 in cost share for each year of this grant.

Little Chico Creek Watershed Working group will be conducting *Arundo donum* identification with GPS units during the life of this grant. They estimate that this State funded project will provide an estimated cost share of \$7,000 for staff time and \$1,000 for equipment and travel over the life of the grant.

CERES, the California Environmental Resources Evaluation System, has pledged its ongoing web and email listserv administration services worth \$10,000. CERES technical and systems support for designing the comprehensive *Arundo donum* information system adds a cost-share value as well.

There are several items that exist in support of this application that do not fit the definition of "cost share". Several items were federally funded, so we are unable to count them as cost share. They include: existing landowner identification maps, technical support from UC Davis staff time from federally funded grants. Another important item are the commitments from each of the landowners to agree to assist in monitoring the eradication effort. These items are all important to the success of this grant, all have a huge worth to the project, but, under federal guidelines, all cannot count as formal cost share items.



G. LOCAL INVOLVEMENT

This project application was developed with the support of several local groups, county and city agencies, landowners, and other interested organizations. There are several letters of support attached at the back of this application.

In Tehama County, Vicky Dawley, Watershed Coordinator for the Tehama County Resource Conservation District, will be in charge of public outreach. Vicky will be hiring and overseeing an employee who will be responsible for contacting all affected landowners, local government agencies and other interested organizations. This staff person will keep people informed of the project efforts as they are developed, thus allowing interested parties the ability to fully participate in the planning process.

In Butte County, this process will be conducted by Suzanne Gibbs of the Big Chico Creek Alliance with assistance from Jean Hubble from the Little Chico Creek Working Group. It will be their responsibility to contact all affected landowners, local government agencies and various other organizations. They will also keep interested parties informed of the project plans as they are developed allowing full participation in the planning process.

In Glenn County Christy Leighton and John Benoit are already involved in ongoing landowner coordination meetings through their funded grants. They will use these meetings to outreach to affected landowners and to keep local government agencies involved. They will also be responsible for coordinating with the local resource conservation office. Any individuals interested in participating in the planning process will be supplied with all pertinent information and notification of meeting times. TAUS is actively involved in these meetings and has made numerous presentations.

The Outreach Coordinators will all be responsible for establishing a process for notifying all landowners in each targeted reach (both directly affected landowners and adjacent landowners). Coordinators will be required to make presentations to their local government entities once the grant is funded, once participating landowners are identified and at the end of the grant period. Most of the watershed coordinators are representatives of the watershed organizations in their respective counties. Other affected watershed organizations have been apprised of this project through the monthly ShedHead meetings held in Chico and through an e-mail listserv that sought feedback on numerous draft applications.

The general public in each county will be notified at the start of the grant. There will be a general meeting conducted by the Outreach Coordinators in each county within the first six months of the grant being awarded. *At* this meeting landowners and other interested parties will have the proposed project explained in detail. In addition, there will be a question and answer period and names and address will be taken for future outreach.



H. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

APPLICATION FOR FEDERAL ASSISTANCE

1. TYPE OF SUBMISSION <i>Application</i> <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction		2. DATE SUBMITTED 5/15/00	Applicant Identifier
		3. DATE RECEIVED BY STATE	State Applicant Identifier
		4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

5. APPLICANT INFORMATION	
Legal Name: The CSU, Chico Research Foundation Address (give city, county, state, and zip code): Kendall Hall, Room 114 CSU, Chico Chico, Butte Co., CA 95929-0870	Organizational Unit Name and telephone number of person to be contacted on matters involving this application (give area code): Technical: Richard Holman (530-898-5669) Budgetary: Jeff Wright (530-898-5700) Contractual: Virginia Sturr (530-898-5700)

6. EMPLOYER IDENTIFICATION NUMBER (EIN): <div style="border: 1px solid black; padding: 2px; display: inline-block;"> 6 8 - 0 3 8 6 5 1 8 </div>	7. TYPE OF APPLICANT: (enter appropriate letter in box) I <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;">A. Slate</div> <div style="width: 50%;">H. Independent School Dist.</div> <div style="width: 50%;">B. county</div> <div style="width: 50%;">I. State Controlled Institution of Higher Learning</div> <div style="width: 50%;">C. Municipal</div> <div style="width: 50%;">J. Private University</div> <div style="width: 50%;">D. Township</div> <div style="width: 50%;">K. Indian Tribe</div> <div style="width: 50%;">E. Interstate</div> <div style="width: 50%;">L. individual</div> <div style="width: 50%;">F. Intermunicipal</div> <div style="width: 50%;">M. Profit Organization</div> <div style="width: 50%;">G. Special District</div> <div style="width: 50%;">N. Other (Specify) _____</div> </div>
---	--

8. TYPE OF APPLICATION: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision If Revision, enter appropriate letter(s) in box(es): A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration Other (specify): _____	9. NAME OF FEDERAL AGENCY 11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: Arundo Donax: Survey and Eradication
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10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER	
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 1 2 3 4 5 6 7 8 9 10 11 12 </div>	
TITLE: CALFED Bay-Deita Program	
12. AREAS AFFECTED BY PROJECT (cities, counties, states, etc.): Tehama, Glenn and Butte counties	

13. PROPOSED PROJECT:		14. CONGRESSIONAL DISTRICTS OF	
Start Date	Ending Date	a. Applicant	b. Project
10/1/2000	9/30/2003	2nd	2nd & 3rd

15. ESTIMATED FUNDING:		16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS? a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON DATE _____ b. NO. <input type="checkbox"/> PROGRAM IS NOT COVERED BY E.O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW
a. Federal	\$ 773,681.00	
b. Applicant	\$.00	
c. State	\$.00	
d. Local	\$.00	
e. Other	\$ 41,300.00	
f. Program Income	\$.00	
g. TOTAL \$ 814,981.00		17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT? <input type="checkbox"/> Yes If "Yes," attach an explanation. <input checked="" type="checkbox"/> No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.		
a. Typed Name of Authorized Representative Jeff Wright	b. Title Director, Office of Sponsored Programs	c. Telephone number 530-898-5700
d. Signature of Authorized Representative 		e. Date Signed

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY						
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		\$	\$	\$ 1,575,218	\$	\$ 1,575,218
2.						0
3.						0
4.						0
5. TOTALS		\$ 0	\$ 0	\$ 1,575,218	\$ 0	\$ 1,575,218
SECTION B - BUDGET CATEGORIES						
6. OBJECT CLASS CATEGORIES		GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)		
a. Personnel	\$ 210,151	\$ 135,350	\$ 93,657	\$	\$	439,158
b. Fringe Benefits	\$65,000	\$39,368	\$26,327			130,695
c. Travel						0
d. Equipment						0
e. Supplies	\$26,000	\$18,600	\$14,000			58,600
f. Contractual	\$342,500	\$196,000	\$143,000			681,500
g. Construction						0
h. Other	\$41,766	\$20,852	\$18,200			80,818
i. Total Direct Charges (sum of 6a-6h)	685,417	410,170	295,184	0		1,390,771
j. Indirect Charges	\$88,263	\$56,847	\$39,336			184,446
k. TOTALS (sum of 6i and 6j)	\$ 773,680	\$ 467,017	\$ 334,520	\$ 0	\$	1,575,217
7. Program Income						
	\$	\$	\$	\$	\$	0

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Standard Form 424A (Rev. 7-97)

Previous Edition Usable

Prescribed by OMB Circular A-102

SECTION C - NON FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other sources	(e) TOTALS
8.	\$ 0	\$ 0	\$ 0	\$ 0
9.				0
10.				0
11.				0
12. TOTALS (sum of lines 8 and 11)	\$ 0	\$ 0	\$ 0	\$ 0

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 773,681	\$ 193,420	\$ 193,420	\$ 193,420	\$ 193,420
14. NonFederal	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
15. TOTAL (sum of lines 13 and 14)	\$ 773,681	\$ 193,420	\$ 193,420	\$ 193,420	\$ 193,420

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16.	\$ 467,017	\$ 334,520		
17.				
18.				
19.				
20. TOTALS (sum of lines 16 - 19)	\$ 467,017	\$ 334,520	\$ 0	\$ 0

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges: \$184,446
23. Remarks:	

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

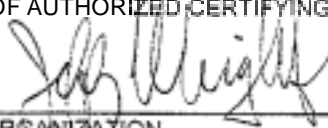
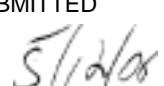
**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET.
SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

AS the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Prevention and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeiand Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333). regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 5470). EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133. "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL  Jeff Wright		TITLE Director Office of Sponsored Programs	
APPLICANT ORGANIZATION The CSU, Chico Research Foundation California State University, Chico		DATE SUBMITTED 	

U.S. Department of the Interior

**Certifications Regarding Debarment, Suspension and
Other Responsibility Matters, Drug-Free Workplace
Requirements and Lobbying**

Persons signing this form should refer to the regulations referenced below for complete instructions:

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions - The prospective primary participant further agrees by submitting this proposal that it will include the clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all **lower** tier covered transactions and in all solicitations for lower tier covered transactions. See below for language to be used or use this form certification and sign. (See Appendix A of Subpart D of 43 CFR ?art 12.)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions - (See Appendix B of Subpart D of 43 CFR Part 12.)

Certification Regarding Drug-Free Workplace Requirements - Alternate I. (Grantees Other Than Individuals) and Alternate II. (Grantees Who are Individuals) - (See Appendix C of Subpart D of 43 CFR ?art 12)

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of the Interior determines to award the covered transaction, grant, cooperative agreement or loan.

**PART A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters-
Primary Covered Transactions**

CHECK X IF THIS CERTIFICATION IS FOR A PRIMARY COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

**PART B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -
Lower Tier Covered Transactions**

CHECK X IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART C: Certification Regarding Drug-Free Workplace Requirements

CHECK X IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS NOT AN INDIVIDUAL.

Alternate I. (Grantees Other Than individuals)

A. The grantee certifies that it will or continue to provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing an ongoing drug-free awareness program to inform employees about—
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will --
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- (e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
- (f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted --
 - (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a) (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

Check ___ if there are workplaces on files that are not identified here.

PART D: Certification Regarding Drug-Free Workplace Requirements

CHECK ___ IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternate II. (Grantees Who Are Individuals)

- (a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;
- (b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

PART B Certification Regarding Lobbying
Certification for Contracts, Grants, Loans, and Cooperative Agreements

CHECK ☐ IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND
THE AMOUNT EXCEEDS \$100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT;
SUBCONTRACT, OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

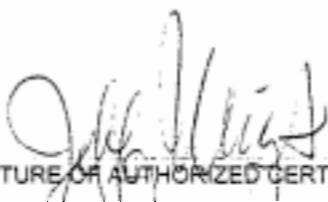
CHECK ☐ IF CERTIFICATION FOR THE AWARD OF A FEDERAL
LOAN EXCEEDING THE AMOUNT OF \$150,000, OR A SUBGRANT OR
SUBCONTRACT EXCEEDING \$100,000, UNDER THE LOAN.

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

As the authorized certifying official, I hereby certify that the above specified certifications are true


SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL
Jeff Wright, Director Office of Sponsored Programs
TYPED NAME AND TITLE
5/12/00
DATE



I. LITERATURE CITED

Bell, Gary P. 1997. *Ecology and Management of Arundo Donax and Approaches to Riparian Habitat Restoration in Southern California*.

California Exotic Pest Plant Council. "Team Arundo donax Workshop Proceedings", available from the Riverside County Regional Park and Open-Space District, P.O. Box 3507, Riverside, CA 92519-3507. http://ceres.ca.gov/tadn/Arundo_donax_facts.html

Dudley, Tom L. *in press*. "Noxious Wildland Weeds of California: Arundo Donax". To be published in *Noxious Wildland Weeds of California*. C. Bossard, J. Randall, & M. Hoshovsky (Eds).

Sawyer, J. and T. Keeler-Wolf *A Manual of California Vegetation*. 1995. CNPS Press.

Team Arundo Workshop Proceedings, Riverside, CA – November 19, 1993 - Submitted papers

"Biology and growth habits of giant reed (Arundo donax)". Gary Bell.

"Arundo donax in the Santa Ana River Basin", Shelton Douthitt.

"The biological pollution of Arundo donax in river estuaries and beaches". Richard Douce.

"The effects of Arundo donax on flood control and endangered species". Paul Frandsen and Nelroy Jackson.

"Fire threat from Arundo donax". Greg Scott.

"The impact of Arundo donax on water resources", Mark Iverson.

"Control of Arundo donax techniques and pilot project", Nelroy Jackson.

"Team Arundo: A model for inter-agency cooperation", Paul Frandsen.

"Section 404 permits: needs and processes", Michele Waltz

"Wetland mitigation banking in the U.S. Army Corps of Engineers, Los Angeles District", Fari Tabatabai

"Re-vegetation of riparian habitat: hauling coals to Newcastle", Gary Bell

"Other invasive non-native plants in CA's wildlands and natural areas, John Randall.

*J. Inverhold
Requirements
page 20
not in hardcopy*

TEAM ARUNDO DEL NORTE

A multi-agency partnership dedicated to the control of the invasive plant Arundo donax where it threatens riparian ecosystems in Northern and Central California

705 First Street West
Sonoma, CA 95476

<http://ceres.ca.gov/tadn>
tadn@ceres.ca.gov

May 11, 2000

Wendy Halverson-Martin
CALFED
1416 Ninth Street, Suite 1155
Sacramento, Ca 95814

Dear Ms. Halverson-Martin,

I am writing to express Team Arundo del Norte's support of the California State University, Chico Research Foundation's proposal under the CALFED Program to comprehensively map and eradicate *Arundo donax* (Arundo, Giant Reed) in Tehama, Butte, and Glenn counties. The Research Foundation's Team Arundo of the Upper Sacramento (TAUS) project will provide the guidance, coordination, and administration necessary for timely control of this weed and protection of remaining native riparian habitat before it is consumed. There is literally no time to lose in this work and we urge CALFED to fund this project, as there is currently no coordinated effort underway for that part of the CALFED region.

Arundo significantly and negatively impacts the health of riparian areas and their associated species. The TAUS project area is home to several of California's listed species, including the fall Chinook salmon that migrate up many of the upper Sacramento River creeks. Arundo will eventually displace the remaining habitat that they depend upon and threaten lives and property through its adaptation with fire and associated changes in stream dynamics. It is recognized by TAdN that there are many Arundo infestations on the Sacramento River and its tributaries, some of which are at a very advanced stage such as is seen in Stony Creek. Invasion by exotics is seen by many ecologists as the single most urgent threat to native California riparian ecosystems. The members of Team Arundo del Norte believe that for CALFED's restoration projects to have a positive effect on the Bay-Delta's ability to support native species, the control of invasives is a first-order task. Arundo is the fastest-moving riparian weed and possibly the most difficult to control once it has taken hold in a stream. Tamarisk, another serious hazard to stream systems, is often associated with Arundo. The mapping work done by TAUS will assist in the identification of stands of that invasive weed as well.

Team Arundo del Norte is committed to the effective and timely control of Arundo, and advocates cooperation and coordination among eradication projects being undertaken around the northern state. Under this philosophy, Team Arundo del Norte has taken responsibility of 26 eradication projects in 6 watersheds with a grant from CALFED starting in 2000. There are many more infestation sites that demand attention as soon as the funding and people are available. Due to the Chico Research Foundation's advanced capacity for coordination and its intimate relationship with the immediate region and community, TAdN believes that the most effective way to address the Arundo problem in the Northern Sacramento River area is by funding TAUS directly as a coordination node.

TEAM ARUNDO DEL NORTE

A multi-agency partnership dedicated to the control of the invasive plant Arundo donax where it threatens riparian ecosystems in Northern and Central California

905 First Street West
Sonoma, CA 95476

<http://ceres.ca.gov/tadn>
tadn@ceres.ca.gov

TAUS is part of Team Arundo del Norte. The principals of this proposed project are long-standing members of TAdN and have been acting in an advisory role on the steering committee for the TAdN CalFed project. We are co-developing the tools and methods that are needed to affect a single view of the Arundo problem in the CALFED region, and a single body of information for the support of its control. The TAUS project will be implemented in cooperation with existing eradication projects through its close association with Team Arundo del Norte, and its information and experience will become part of the Arundo data clearinghouse being developed by TAdN. For example, TAUS' results of trials with various methods for eradication and revegetation will be shared via the clearinghouse to benefit others undertaking similar work in other sites. Techniques TAUS develops for invasive species classification from aerial photo imagery will be useful in mapping the rest of the CALFED region.

We encourage and support any effort to focus more resources on the control and ultimate eradication of Arundo. Funding of another coordination node will further enable adequate coordination, technical support, and monitoring, so that a maximum amount of Arundo can be eliminated in the quickest timeframe. We recommend that CALFED support this important effort.

Sincerely,



Deanne DiPietro
for Team Arundo del Norte and the Sonoma Ecology Center

cc: tadn@ceres.ca.gov

DEPARTMENT OF FOOD AND AGRICULTURE



1220 N Street, Room A-357
Sacramento, CA 95814
Telephone: (916) 654-0768
Facsimile: (916) 653-2403

May 9, 2000

Wendy Halverson-Martin
CalFed
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear Ms. Halverson-Martin

This letter is written in support of the California State University, Chico Research Foundation's proposal under the CALFED Program to educate landowners and eradicate *Arundo Donax* (Giant Reed). Of particular concern is the infestation of *Arundo donax* in several Northern California counties. The Research Foundation's Team *Arundo* of the Upper Sacramento (TAUS) is instituting an aggressive plan to control invasive non-native plant material of which *Arundo Donax* is a high priority. This project is being conducted in cooperation with existing eradication projects. The Sonoma Ecology Center is actively working with TAL'S to coordinate their efforts, and help TAUS address upstream infestations of *Arundo*. The proposed project will allow this very necessary work to take place in three north-state counties.

Arundo first invaded watersheds in Southern California. We have witnessed the vast economic and environmental costs associated with letting *Arundo* spread unchecked. Early eradication is essential in preserving infested waterways throughout the Calfed Bay-Delta System. If northern California acts now, we can prevent the level of devastation seen by our Southern California neighbors.

Arundo donax can significantly and negatively impact the health of riparian areas and their associated species, including several of California's listed species. The fall Chinook salmon that migrate up many of the upper Sacramento River creeks are endangered. *Arundo* will only aggravate their situation. It is further documented that *Arundo* can increase flooding and property damage as well as shift the composition of riparian vegetation toward an *Arundo* monoculture and create a high fire risk condition.

We welcome and appreciate any effort to focus more resources on the control and ultimate eradication of *Arundo*, as well as other invasive species throughout the watershed. Funding will assure adequate coordination, technical support and monitoring, so that a maximum amount of *Arundo* can be eliminated over time.

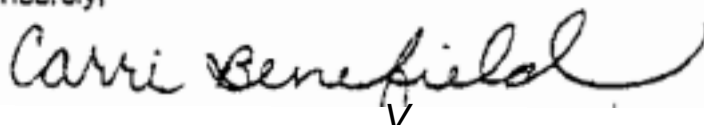
Ms. Halverson-Martin

Page 2

May 9, 2000

We support this proposal and have full confidence in TAUS's leadership and commitment in the eradication of *Arundo donax*, a significant threat to the health of the Calfed Bay-Delta watershed.

Sincerely,

A handwritten signature in cursive script that reads "Carri Benefield". A small downward-pointing arrow is positioned below the signature.

Carri Benefield, **Associare** Agricultural Biologist
Integrated Pest Control Branch
Plant Health and Pest Prevention Services

M e m o r a n d u m

Date : May 10, 2000

To : Wendy Halverson-Martin
CALFED
1416 Ninth Street, Suite 1155
Sacramento, California 95814

From : Department of Water Resources

Subject : Support of the California State University, Chico Research Foundation's Proposal

This memorandum is written in support of the California State University, Chico Research Foundation's proposal under the CALFED Program to educate landowners, map and eradicate Arundo Donax (Giant Reed) in the northern Sacramento River watershed.

The Department supports this effort because the project will involve intensive aerial photography and mapping of many local tributaries in this area. This information will also be very useful for other groups to use in planning restoration projects, for mapping riparian habitat, and for other watershed management efforts.

Additionally, CSUC has involved local groups and stakeholders from the outset in preparing this proposal. It has been a coordinated effort, allowing others to assure their needs are met and included. Meetings have been held where other participants have had the opportunity for input into the design of the project. The result has been a reduced number of applications to the CALFED program for similar projects. This is the type of locally driven effort which has definite potential for success.

We look forward to working with the CSUC and local watershed groups to see that this project, if funded, is a success for all. If you have any questions, please call me or Fraser Sime at (530) 529-7374.



Dwight P. Russell, Chief
Northern District
(530) 529-7342



**COUNTY OF TEHAMA
DEPARTMENT OF PUBLIC WORKS**

9380 SAN BENITO AVENUE
GERBER, CA 96035-9701
Bus: (530) 385-1462
FAX: (530) 385-1189

ROAD COMMISSIONER
SURVEYOR
ENGINEER
PUBLIC TRANSIT
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
SANITATION DISTRICT No. 1

May 10, 2000

W-00-54

Wendy Halverson-Martin
CALFED
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear Ms. Martin:

This letter is written in support of the California State University, Chico Research Foundation's proposal under the CALFED Program to educate landowners and eradicate Arundo Donax (Giant Reed). Of particular concern is the infestation of Arundo Donax in several Northern California counties, especially in Tehama County which contains some of the uppermost infested tributaries of the Sacramento River system. The Research Foundation's Team Arundo of the Upper Sacramento (TAUS) is instituting an aggressive plan to control invasive nonnative plant material of which Arundo Donax is a high priority. This project is being conducted in cooperation with existing eradication projects. The Sonoma Ecology Center is actively working with TAUS to coordinate their efforts, and help TAUS address upstream infestations of Arundo. The proposed project will allow this very necessary work to take place in three north state counties.

Arundo Donax can significantly and negatively impact the health of riparian areas and their associated species, including several of California's listed species. The fall Chinook salmon that migrate up many of the upper Sacramento River tributary streams are endangered. Arundo will only aggravate their situation. It is further documented that Arundo can increase flooding and property damage as well as shift the composition of riparian vegetation toward an Arundo monoculture and create a high fire risk condition.

We welcome and appreciate any effort to focus more resources on the control and ultimate eradication of Arundo. Funding will also assure adequate coordination, technical support and monitoring, so that a maximum amount of Arundo can be eliminated over time.

We support the Chico State University application and applaud TAUS's leadership in seeking support and funding from CALFED for eradication of Arundo Donax. The attached Minute Order reflects the Tehama County Board of Supervisor's support of this application.

Sincerely,

A handwritten signature in dark ink, appearing to read "Ernie Ohlin".

Ernie Ohlin

Water Resources Manager,
Tehama County Flood Control and
Water Conservation District

encl (1)

MINUTE ORDER
BOARD OF SUPERVISORS
COUNTY OF TEHAMA, STATE OF CALIFORNIA

R E G U L A R A G E N D A

TEHAMA COUNTY PUBLIC WORKS DEPARTMENT / WATER RESOURCES - Concurrence to Have Tehama County Listed as a Collaborator on the Chico State University Arundo-Donax CALFED Grant Application

A motion was made by Supervisor Willard, seconded by Supervisor Borrer and carried by the unanimous vote of the Board to grant concurrence to have Tehama County listed as a collaborator on the Chico State University Arundo-Donax CALFED Grant application.

STATE OF CALIFORNIA)
) ss
COUNTY OF TEHAMA)

I, MARY ALICE GEORGE, County Clerk and ex-officio Clerk of the Board of Supervisors of the County of Tehama, State of California, hereby certify the above and foregoing to be a full, true and correct copy of an order adopted by said Board of Supervisors on the 9th day of May 2000.

DATED: May 11,2000

MARY ALICE GEORGE, County Clerk and
Ex-officio Clerk of the Board of Supervisors of the
County of Tehama, State of California

by Jennifer E. Burnett
Deputy



**OFFICE OF THE
CITY MANAGER**

411 Main Street
P O Box 3420
Chico, CA 95927

(530) 395-3300
FAX (530) 395-4825
ATSS 459-4800

May 8, 2000

Wendy Halverson-Martin
CalFed
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear **Ms.** Halverson-Martin:

This letter is written in support of the California State University, Chico Research Foundation's proposal under the CALFED Program to eradicate Arundo Donax (Giant Reed). Of particular concern is the infestation of Arundo Donax in Bidwell Park along Big Chico Creek and Lindo Channel. The City of Chico has an aggressive plan to control invasive non-native plant material of which Arundo Donax is a high priority. An existing project in cooperation with the Sonoma Ecology Center is allowing the City of Chico to address upstream infestations of Arundo. The proposed project will allow us to work down the watershed and on Lindo Channel and Little Chico Creek.

The Team Arundo of the Upper Sacramento (TAUS) is in coordination with the Team Arundo del Norte submitted and approved by the Sonoma Ecology Center. Both programs are focused on the successful Arundo eradication.

As is well documented, Arundo Donax can significantly and negatively impact the health of riparian areas and their associated species, including several of California's listed species. The Fall Chinook Salmon that migrate up Big Chico Creek are endangered. Arundo will only aggravate their situation. It is further documented that Arundo can increase flooding and property damage as well as shift the composition of riparian vegetation toward an Arundo monoculture and create a high fire risk condition.

We welcome and appreciate any effort to focus more resources on the control and ultimate eradication of Arundo. Funding will also assure adequate coordination, technical support and monitoring, so that a maximum amount of Arundo can be eliminated over time.

We support your application and applaud your leadership in seeking support from the CALFED for eradication of Arundo Donax.

Sincerely,

Tom Lando
City Manager

cc: City Council
EPPC
PKDir
UF





CITY OF CHICO MEMORANDUM

TO: City Council **DATE:** May 8, 2000
FROM: Park Director (895-4849) **FILE:** Arundo/CALFED#2
RE: Vegetation Management Program - Arundo Donax

Sonoma Ecology Center (a watershed-based non-profit in the Sonoma Valley) and several other entities interested in getting rid of Arundo Donax (Giant Reed) in Northern and Central California formed Team Arundo del Norte about three years ago. One of the main motivations for the program is to avoid the disastrous Arundo situation in several Southern California watersheds. After a couple years of fruitful meetings focused on coordinating the many Arundo-related efforts in the region, the Sonoma Ecology Center applied for and is receiving money to begin addressing the problem. The City of Chico is participating in that program to address Arundo infestations in Upper Bidwell Park between the Five Mile Recreation Area and the Bidwell Municipal Golf Course.

California State University, Chico Research Foundation is leading a second effort for additional funding that will extend the work started under the Team Arundo del Norte program. Team Arundo of the Upper Sacramento is focusing on sites in Tehama, Butte, and Glenn counties on seven creeks (Reeds, Red Bank, Brickyard, Birch, Stony, Big and Little Chico Creeks and Lindo Channel).

Grant applications to control Arundo are currently being accepted under the CALFED Bay-Delta Program. The California State University, Chico Research Foundation is aware of the Park Department's vegetation management program and concern about problems created by Arundo and has invited the City of Chico to participate in the application. No additional allocation is required or being requested.

The Master Management Plan for Bidwell Park identifies Arundo as an invasive noxious non-native that has the potential to seriously degrade major portions of creeks in our region. More recently, the Bidwell Park and Playground Commission has discussed the need to control Arundo during review of the Vegetation Management Program. The most effective control technique is to cut the Arundo stocks and apply a systemic chemical (trade name Rodeo) which kills the root system. The process involves applying the chemical to the cut stalk. The material is not sprayed. Staff estimates there are about eleven acres of Arundo in Bidwell Park and Lindo Channel. City participation in controlling Arundo along Little Chico Creek will be limited to City owned parcels. California State University, Chico Research Foundation will be responsible for contacting and working with private property owners to control Arundo on their property.

cc: BPPC



CITY OF CHICO MEMORANDUM

TO: BIDWELL PARK AND PLAYGROUND
COMMISSION DATE: MARCH 13, 2000

FROM: PARK DIRECTOR FILE: BPPC4-24-00 4.7

SUBJECT: REQUEST TO PARTICIPATE IN REMOVAL OF ARUNDO DONAX
(GIANT REED) FROM THE LITTLE CHICO CREEK AND LINDO
CHANNEL

Recommendation:

Park Director recommends Commission support to participate in a grant proposal to eradicate Arundo Donax from various waterways throughout Chico.

Backaround:

Staff has received a request from the California State University, Chico, Environmental Resource Program to participate in grant application to address the invasive Arundo Donax in area waterways. This is an expanded version of the program the Park Department is participating through Team Arundo del Norte which addresses Big Chico Creek.

Attachment: Kristin Cooper-Carter April 14, 2000 letter



**Glenn County Board of Supervisors
Denny Bungarz, District 4
526 West Sycamore Street, P.O. Box 391
Willows, CA 95988**



May 10, 2000

Wendy Halverson-Martin
CalFed
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear Ms. Halverson-Martin:

This letter is written in support of the California State University, Chico Research Foundation's proposal under the CALFED Program to educate landowners and eradicate *Arundo Donax* (Giant Reed). Of particular concern is the infestation of *Arundo Donax* in several Northern California counties. The Research Foundation's Team *Arundo* of the Upper Sacramento (TAUS) is instituting an aggressive plan to control invasive non-native plant material of which *Arundo Donax* is a high priority. This project is being conducted in cooperation with existing eradication projects. The Sonoma Ecology Center is actively working with TAUS to coordinate their efforts, and help TAUS address upstream infestations of *Arundo*. The proposed project will allow this very necessary work to take place in three northstate counties.

Arundo Donax can significantly and negatively impact the health of riparian areas and their associated species, including several of California's listed species. The fall Chinook salmon that migrate up many of the upper Sacramento River creeks are endangered. *Arundo* will only aggravate their situation. It is further documented that *Arundo* can increase flooding and property damage as well as shift the composition of riparian vegetation toward an *Arundo* monoculture and create a high fire risk condition.

We welcome and appreciate any effort to focus more resources on the control and ultimate eradication of *Arundo*. Funding will also assure adequate coordination, technical support and monitoring, so that a maximum amount of *Arundo* can be eliminated over time.

We support the application and applaud TAUS's leadership in seeking support from CALFED for eradication *Arundo Donax*.

Sincerely,



Denny Bungarz

cc: California State University, Chico Research Foundation
Glenn County Public Works and Development Agency

Telephone: (530) 934-7342; Voice Mail (530) 934-6418
e-mail: dbungarz@glenncounty.net

**PUBLIC WORKS AND DEVELOPMENT SERVICES AGENCY**

PLANNING DIVISION
125 SOUTH MURDOCK AVENUE
WILLOWS, CALIFORNIA 95988
John Benoit, Chief Deputy Director

Kristin Cooper-Carter
427 O'Connell
California State University, Chico
Chico, California 95929-003

Dear Ms. Cooper-Carter:

RE: CalFed Arundo Donax Eradication Project

Glenn County supports the CSU Chico grant application to CALFED for eradication of Arundo donax. The main Arundo donax problem in Glenn County is along Lower Stony Creek.

Arundo donax eradication **was** also the **primary** objective to emerge from the Lower Stony Creek **Task** Force sponsored by the US Bureau of Reclamation as stated in the Lower Stony Creek Fish, Wildlife and Water Use Management Plan, November 13, 1998, prepared by the US Department of Interior Bureau of Reclamation Mid-Pacific Region Northern California **Area** Office, Shasta Lake, California.

Glenn County has received a 205j grant from the Water Resources Control Board to start a Lower Stony Creek landowners group and to prepare a landowner vision plan for Lower Stony Creek. Four landowner meetings have been held so far.

Each Lower Stony Creek landowner meeting **has** been attended by approximately **sixty** landowners. The landowners have expressed a **high** degree of concern about **Arundo** donax eradication. Representatives from CSU Chico have attended these meetings to explain the grant application and the landowners have been enthusiastic about the project. **The** landowners are still in the process of forming an organization.

The landowners are aware of this application and are supportive. The **Arundo** donax eradication will be done in ways that **will** minimize downstream effects and third-party impacts.

Yours truly,

John Benoit, Chief Deputy Director
Public Works and Development Services Agency

**PUBLIC WORKS AND DEVELOPMENT SERVICES AGENCY**

PLANNING DIVISION
125 SOUTH MURDOCK AVENUE
WILLOWS, CALIFORNIA 95988
John Benoit, Chief Deputy Director

Kristin Cooper-Carter
427 O'Connell
California State University, Chico
Chico, California 95929-003

Dear Ms. Cooper-Carter:

RE: CalFed Arundo Donax Eradication Project

Enclosed is a letter signed by four landowners along Stony Creek. The landowners are as follows:

Orland Sand & Gravel Corp.
Donald L. Thomas, President
PO Box 815,
Orland, CA 95963

Ron Svejda
6379 County Road 16
Orland, CA 95963

Janet Schulke
6762 County Road 12
Orland, CA 95963

Bruce Strickland
3974 Highway 45
Hamilton City CA 95951

Other landowners also expressed interest and support. I hope they will send in their letters separately.

Thank you for your interest in Glenn County.

Yours truly,

Christy Leighton
(Christy Leighton)

Principal Planner

Environmental Resource Program

427 O'Connell
California State University, Chico
Chico, California 95929-0003
Telephone: (530) 898-4335
Fax: (530) 898-5492

April 27, 2000

Dear Stony Creek Landowner,

This letter is being submitted in order to comply with the proposal requirement that any physical actions on private or public lands must provide satisfactory evidence that the landowner is a willing participant in the action.

By signing this letter, several of the landowners attending the Stony Creek coordination meeting on April 27, 2000 on Stony Creek are showing their interest in the removal of Arundo Donax from their property. This letter only represents a small number of landowners, and does not preclude other landowners that did not have an opportunity to sign this letter from participating.

As landowners, they further understand that projects proposed on private property or which require access to private property must include written permission from the property owner before any land access. By signing this letter, these landowners are showing a significant interest in being included as an eradication partner in this project.

Since this is a project for which specific locations have not been identified, these landowners understand that they will be required to provide access needs and permission for access within 30 days of notification of approval. CSU, Chico's Research foundation understands that failure to include written permission from the property owner may result in disqualification of the proposal.

Signed,

Orland Land & Gravel Corp

Donahue Thomas, Pres

~ 100 acres

Ron Linder 60+ Acres
Janet Schulte 24+ acres
Ben Schulte 20. "



TEHAMA COUNTY RESOURCE CONSERVATION DISTRICT

2 Sutter Street, Suite D, Red Bluff, California 96080

530-527-3013 Fax: 530-527-7451

May 11, 2000

Wendy Halverson-Martin
CalFed
1416 Ninth Street, Suite 1155
Sacramento, Ca 95814

Dear Ms. Halverson-Martin,

This letter is written in support of the California State University, Chico Research Foundation's proposal under the CALFED Program to educate landowners and eradicate *Arundo Don a* (Giant Reed).

Arundo Don a can significantly and negatively impact the health of riparian areas and their associated species, including several of California's listed species. The fall Chinook salmon that migrate up many of the upper Sacramento River creeks are endangered. *Arundo* ~~w~~only aggravate their situation. It is further documented that *Arundo* can increase flooding and property damage as well as shift the composition of riparian vegetation toward an *Arundo* monoculture and create a high fire risk condition, both issues of great concern in the Tehama County creeks in this proposal.

In Tehama County, there are many streams with heavy *Arundo* infestations. This proposal will provide mapping of the whole county to assist in future eradication efforts, and will provide information about revegetation after eradication. All of the Tehama County creeks in *this* proposal, but particularly Burch and Jewett Creeks - which are heavily infested with *Arundo*, will serve as examples for landowners in other county watersheds of the positive benefits of *Arundo* eradication.

Beyond eradication, a very positive aspect of ~~this~~ proposal is the outreach and eradication component. Because the Research Foundation is coordinating with the Tehama County Resource Conservation District (TCRCD), landowner contacts and education will be provided by local people. TCRCD has a long history of positive relationships with the community, and specialize in presenting educational programs.


TCRCD is engaged in a 319 (h) contract with State Water Resources Control Board for a project in the Reeds Creek and Red Bank Creek watersheds. The project consists of funding private landowners to demonstrate techniques to increase watershed health, funding a watershed education program with an elementary school in the watershed, hosting meetings of watershed stakeholders and presenting workshops. The workshops have been open to the public and have been well attended. Particularly popular was a workshop on Noxious Weeds, where star thistle and *Arundo* control were of great interest.

On June 1, 2000, TCRCD will **start** a 204 contract with State Water Resources Control Board. This will expand TCRCD's focus beyond the Reeds Creek and Red Bank Creek watersheds, to include all county watersheds. We will serve as a central clearinghouse for all county watersheds, and help unite landowners in watersheds with no landowner groups.

We welcome and appreciate any effort to focus more resources on the control and ultimate eradication of *Arundo*, a problem in many Tehama County watersheds. Funding will also assure adequate coordination, technical support and monitoring, so that a **maximum** amount of *Arundo* can be eliminated over time.

We support the Research Foundation's application and applaud TAUS's leadership in seeking support from CALFED for eradication of *Arundo Donax*.

Sincerely,

A handwritten signature in dark ink, appearing to read "Ernest White". The signature is fluid and cursive, with the first name "Ernest" written in a larger, more prominent script than the last name "White".

Ernest White

President, Board of Directors

Tehama County Resource Conservation District

cc: Richard Holman

Big Chico Creek Watershed Alliance

b i g c h i c o @ c s u c h i c o . e d u



May 8, 2000

Wendy Halverson-Martin
CALFED
1416 Ninth Street, Suite 1155
Sacramento, Ca. 95814

Dear Ms. Halverson-Martin;

This letter is written in support of the California State University, Chico Research Foundation's proposal under the CALFED Program to educate landowners and eradicate *Arundo donax* (Giant Reed). Of particular concern is the infestation of *Arundo donax* in the Big Chico Creek watershed. The Research Foundation's Team *Arundo* of the Upper

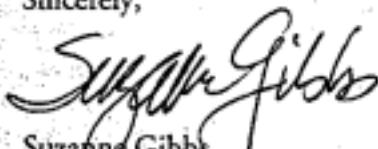
Sacramento (TAUS) is instituting an aggressive plan to control invasive non-native plant material of which *Arundo donax* is a high priority. This project is being conducted in cooperation with existing eradication projects. The Sonoma Ecology Center is actively working with TAUS to coordinate their efforts, and help TAUS address upstream infestations of *Arundo*. The proposed project will allow this very necessary work to take place in three Northstate counties.

Arundo donax can significantly and negatively impact the health of riparian areas and their associated species, including several of California's listed species. The Chinook salmon and steelhead trout that migrate up many of the upper Sacramento River watershed creeks are endangered or listed as species of special concern. *Arundo* infestation will only aggravate their need of appropriate habitat for migration, spawning and rearing in the watersheds. It is further documented that *Arundo* can increase flooding and property damage as well as shift the composition of riparian vegetation toward an *Arundo* monoculture and create a high fire risk condition.

We welcome and appreciate any effort to focus more resources on the control and ultimate eradication of *Arundo*. Funding will also assure adequate coordination, technical support and monitoring, so that a maximum amount of *Arundo* can be eliminated over time.

We support your application and applaud TAUS's leadership in seeking support from CALFED for eradication of *Arundo donax*.

Sincerely,


Suzanne Gibbs
Watershed Coordinator

Environmental Resource program

427 O'Connell
California State University, Chico
Chico, California 95929-0003
Phone: (530) 898-4335
Fax: (530) 898-5492

May 12, 2000

Glenn County Board of Supervisors

P.O. Box 391
Willows, CA 95988

Kristin Cooper-Carter
Environmental Resource Program
Office of Sponsored Programs
California State University, Chico
Chico, CA 95929-0003

Dear Supervisors,

A proposal titled, "Arundo Donax: Survey and Eradication Coordination by the Team Arundo of the Upper Sacramento (TAUS)" will be submitted on May 15, 2000 for consideration by the CALFED Bay-Delta Program's Ecosystem Restoration Program and Strategic Plan in response to the 2001 Proposal Solicitation Package. **This** proposed project would *start* on and end.

The primary objective of this project is to identify areas infested by Arundo grows in several north state watersheds, to outreach to the landowners affected, to educate those landowners in very small, hands-on workshops and to assist them in eradication of Arundo Donax.

An Executive **Summary** of this proposal **will** be forthcoming by the end of the month.

If you have any questions **a b u t** this proposal, please **feel free** to call my office at (530) 898-4335.

Sincerely,



Kristin Cooper-Carter, Coordinator
Environmental Resource Center

Environmental
Resource
Program

427 O'Connell
California State University, Chico
Chico, California 95929-0003
Phone: (530) 898-4335
Fax: (530) 898-5492

May 12, 2000

Tehama County Supervisors

633 Washington Street Rm. 13
Red Bluff, CA 96080

Kristin Cooper-Carter
Environmental Resource Program
Office of Sponsored Programs
California State University, Chico
Chico, CA 95929-0003

Dear Supervisors,

A proposal titled, "Arundo Donax: Survey and Eradication Coordination by the Team Arundo of the Upper Sacramento (TAUS)" will be submitted on May 15, 2000 for consideration by the CALFED Bay-Delta Program's Ecosystem Restoration Program and Strategic Plan in response to the 2001 Proposal Solicitation Package. This proposed project would start on and end.

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An Executive Summary of ~~this~~ proposal ~~will~~ be forthcoming by the end of the month.

If you have any questions about ~~this~~ proposal, please feel free to call my office **at** (530) 898-4335.

Sincerely,



Kristin Cooper-Carter, Coordinator
Environmental Resource Center

Environmental Resource program

427 O'Connell
California State University, Chico
Chico, California 95929-0003
Phone: (530) 898-4335
Fax: (530) 898-5492

May 12, 2000

Butte County Board of Supervisors

2279 Del Oro Avenue, Suite A
Oroville, CA 95965

Kristin Cooper-Carter
Environmental Resource Program
Office of Sponsored Programs
California State University, Chico
Chico, CA 95929-0003

Dear Supervisors,

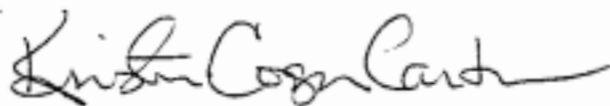
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If you have any questions about this proposal, please feel free to call my office at (530) 898-4335.

Sincerely,



Kristin Cooper-Carter, Coordinator
Environmental Resource Center

Environmental Resource Program

427 O'Connell
California State University, Chico
Chico, California 95929-0003
Phone: (530) 898-4335
Fax: (530) 898-5492

May 12, 2000

Butte County Planning Department

2279 Del Oro Avenue, Suite A
Oroville, CA 95965

Kristin Cooper-Carter
Environmental Resource Program
Office of Sponsored Programs
California State University, Chico
Chico, CA 95929-0003

Dear Planning Department,

A proposal titled, "Arundo Donax: Survey and Eradication Coordination by the Team Arundo of the Upper Sacramento (TAUS)" will be submitted on May 15, 2000 for consideration by the CALFED Bay-Delta Program's Ecosystem Restoration Program and Strategic Plan in response to the 2001 Proposal Solicitation Package. This proposed project would start on and end.

The primary objective of this project is to identify areas infested by Arundo grows in several north state watersheds, to outreach to the landowners affected, to educate those landowners in very small, hands-on workshops and to assist them in eradication of Arundo Donax.

An Executive Summary of this proposal will be forthcoming by the end of the month.

If you have any questions about this proposal, please feel free to call my office at (530) 898-4335.

Sincerely,



Kristin Cooper-Carter, Coordinator
Environmental Resource Center

Environmental Resource Program

427 O'Connell
California State University, Chico
Chico, California 95929-0003
Phone: (530) 898-4335
Fax: (530) 898-5492

May 12, 2000

Glenn County Planning Department

P.O. Box 391
Willows, CA 95988

Kristin Cooper-Carter
Environmental Resource Program
Office of Sponsored Programs
California State University, Chico
Chico, CA 95929-0003

Dear Planning Department,

A proposal titled, "Arundo Donax: Survey and Eradication Coordination by the Team Arundo of the Upper Sacramento (TAUS)" will be submitted on May 15, 2000 for consideration by the CALFED Bay-Delta Program's Ecosystem Restoration Program and Strategic Plan in response to the 2001 Proposal Solicitation Package. **This** proposed project would start on and end.

The primary objective of this project is to identify areas infested by Arundo grows in several north state watersheds, to outreach to the landowners affected, to educate those landowners in very small, hands-on workshops and to assist them in eradication of Arundo Donax.

An Executive Summary of this proposal will be forthcoming by the end of the month.

If you have any questions about this proposal, please feel free to call my office at (530) 898-4335.

Sincerely,



Kristin Cooper-Carter, Coordinator
Environmental Resource Center

Environmental Compliance Checklist

All applicants must fill out this Environmental Compliance Checklist. Applications must contain answers to the following questions to be responsive and to be considered for funding. Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.

1. Do any of the actions included in the proposal require compliance with either the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), or both?

☒
YES

☐
NO

2. If you answered yes to # 1, identify the lead governmental agency for CEQA/NEPA compliance.

Tehama County RCD, Glenn County, Butte County
Lead Agency

3. If you answered no to # 1, explain why CEQA/NEPA compliance is not required for the actions in the proposal.

4. If CEQA/NEPA compliance is required, describe how the project will comply with either or both of these laws. Describe where the project is in the compliance process and the expected date of completion.

As a result of our work on deer creek, we have received the determination that Arundo Eradication is considered maintenance and therefore exempt.

5. Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?

☒
YES

☐
NO

If yes, the applicant must attach written permission for access from the relevant property owner(s). Failure to include written permission for access may result in disqualification of the proposal during the review process. Research and monitoring field projects for which specific field locations have not been identified will be required to provide access needs and permission for access with 30 days of notification of approval.

As identified in our proposal, identification of affected landowners will be accomplished via our mapping efforts. Within 30 days of landowner identification, letters of permission will be obtained through our outreach efforts.

6. Please indicate what permits **or** other approvals may be required for the activities contained in your proposal. Check all boxes that apply.

LOCAL

Conditional use permit	-
Variance	-
Subdivision Map Act approval	-
Grading permit	-
General plan amendment	-
Specific plan approval	-
Rezone	-
Williamson Act Contract cancellation	-
Other _____ (please specify)	
None required	X

STATE

CESA Comoliance	-	(CDFG)
Streambed alteration permit	X	(CDFG)
CWA § 401 certification	-	(RWQCB)
Coastal development permit	-	(Coastal Commission/BCDC)
Reclamation Board approval	X	
Notification	-	(DPC, BCDC)
Other _____ (please specify)		
None required	-	

FEDERAL

ESA Consultation	-	(USFWS)
Rivers & Harbors Act permit	-	(ACOE)
CWA § 404 permit	-	(ACOE)
Other _____ (please specify)		
None required	X	

DPC = Delta Protection Commission
CWA = Clean Water Act
CESA = California Endangered Species Act
USFWS = U.S. Fish and Wildlife Service
ACOE = **U.S.** Army Corps of Engineers

ESA = Endangered Species Act
CDFG = California Department of Fish and Game
RWQCB = Regional Water Quality Control Board
BCDC = Bay Conservation and Development Comm.

Land Use Checklist

All applicants must fill out this Land Use Checklist for their proposal. Applications must contain answers to the following questions to be responsive and to be considered for funding. Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.

1. Do the actions in the proposal involve physical changes to the land (i.e., grading, planting vegetation, or breaching levees) or restrictions in land use (i.e., conservation easement or placement of land in a wildlife refuge)?

☒
YES

☐
NO

2. If NO to # 1, explain what type of actions are involved in the proposal (i.e., research only, planning only).

3. If YES to # 1, what is the proposed land use change or restriction under the proposal?

Removal of non-native invasive **Arundo Donax**.

4. If YES to # 1, is the land currently under a Williamson Act contract?

☐
YES

☒
NO

5. If YES to # 1, answer the following:

Current land use

VARIOUS

Current zoning

Current general plan designation

VARIOUS

6. If YES to #1, is the land classified as Prime Farmland, Farmland of Statewide Importance or Unique Farmland on the Department of Conservation Important Farmland Maps?

☐
YES

☒
NO

☐
DON'T KNOW

7. If YES to # 1, how many acres of land will be subject to physical change or land use restrictions under the proposal?

Approximately **60** acres of eradication

8. If YES to # 1, is the property currently being commercially farmed or grazed?

☐
YES

☒
NO

9. If YES to #8, what are

the number of employees/acre _____

the total number of employees _____

10. Will the applicant acquire any interest in land under the proposal (fee title or a conservation easement)?

☐ YES

☒ NO

11. What entity/organization will hold the interest? _____

12. If **YES** to # 10, answer the following:

Total number of acres to be acquired under proposal _____

Number of acres to be acquired in fee _____

Number of acres to be subject to conservation easement _____

13. For all proposals involving physical changes to the land **or** restriction in land use, describe what entity or organization will:

manage the property landowner

provide operations and maintenance services landowner

conduct monitoring landowner/ The CSU. Chico Research Foundation

14. For land acquisitions (fee title or easements), will existing water rights also be acquired?

☐ YES

☒ NO

15. Does the applicant propose any modifications to the water right **or** change in the delivery of the water?

☐ YES

☒ NO

16. If YES to # 15, describe _____